CLAIMS

1. A method for manufacturing a porous honeycomb structure, comprising the steps of:

mixing and kneading at least an aggregate raw material, water, an organic binder, a pore-forming agent, and an alkali metal source to obtain clay, the aggregate raw material comprising metal silicon and/or a non-oxide ceramic containing silicon;

forming the clay into a honeycomb shape having a plurality of cells as passages for fluid, followed by drying to obtain a honeycomb formed body;

calcinating the honeycomb formed body to obtain a calcinated body; and

firing the calcinated body to obtain the porous honeycomb structure.

2. The method for manufacturing the porous honeycomb structure according to claim 1, wherein the clay contains 0.01 to 10 parts by mass of the alkali metal source in terms of alkali metal with respect to 100 parts by mass of the aggregate raw material.

3. The method for manufacturing the porous honeycomb structure according to claim 1 or 2, wherein the aggregate raw material contains at least one component selected from the group consisting of silicon carbide, silicon nitride, and metal silicon; and a total mass of the component(s) is 50% by mass or more of a total mass of the aggregate raw material.

4. A honeycomb formed body comprising clay containing at least an aggregate raw material, water, an organic binder, a pore-forming agent, and an alkali metal source, the aggregate raw material comprising metal silicon and/or a non-oxide ceramic containing silicon, the honeycomb formed body having a plurality of cells as passages for fluid.

5. The honeycomb formed body according to claim 4, wherein the clay contains 0.01 to 10 parts by mass of the alkali metal source in terms of alkali metal with respect to 100 parts by mass of the aggregate raw material.

6. The honeycomb formed body according to claim 4 or 5, wherein the aggregate raw material contains at least one component selected from the group consisting of silicon carbide, silicon nitride, and metal silicon, and a total mass of the component(s) is 50% by mass or more of a total mass of the aggregate raw material.